



Fermi

Gamma-ray Space Telescope

Status of ongoing/planned Multiwavelength campaigns

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Approaches to Multiwavelength Campaigns

- 1. Monitoring - regular observations of selected sources**
- 2. Planned Intensive Campaigns (PIC) - choose a time based on availability of MW resources**
- 3. Target of Opportunity (TOO)/followup - react to something seen in GBM, LAT or at other wavelengths.**



Monitoring - Some Examples

Radio

Pulsar timing

(<https://confluence.slac.stanford.edu/display/GLAMCOG/Pulsars+being+timed>)

- LAT team signed agreements with the timing community

AGN studies (<http://pulsar.sternwarte.uni-erlangen.de/radiogamma/>)

Optical/IR

GASP/WEBT (<http://www.to.astro.it/blazars/webt/gasp/list.html>)

Steward Observatory Polarization

(<http://james.as.arizona.edu/~psmith/Fermi/>)

High-Energy

LAT monitors 23 sources

(<http://heasarc.gsfc.nasa.gov/W3Browse/fermi/fermilasp.html>)

Swift watches the 23 LAT monitored sources

TeV telescopes monitor a number of AGN.

Some of these are supported by the Fermi GI program.

Planned Intensive Campaigns -- PICs

Pre-set, major campaigns covering the electromagnetic spectrum for sources expected to be of special interest. Schedule set by availability of other telescopes.

Completed

BL Lac, PKS 2155-304

In Progress or Starting Soon

1ES1959+650, PKS 0528+134

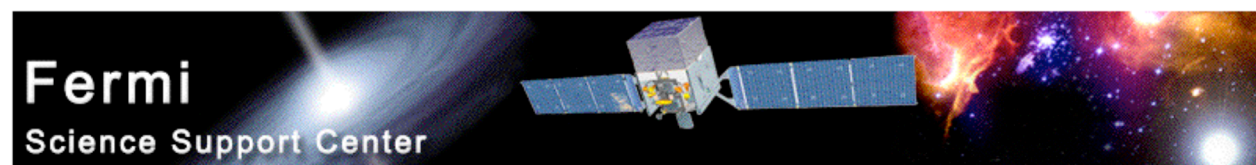
This Winter

Mkn 421, 3C279, 3C273, LSI +61 303

These campaigns are generally advertised in advance, with an invitation for any observers to join.

MW Planning

<http://fermi.gsfc.nasa.gov/ssc/resources/multi/reporting/list.php>



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Multiwavelength Observations Report Listing

Click column heading to sort by that column.

ID	Object	Observation Dates	Wavelength Band
1	PKS 2155-304	2008-08-25 to 2008-09-04	radio/optical/X-ray/HE gamma/VHE gamma
2	3C454.3	2008-08-15 to 2008-08-15	infrared
3	3C454.3	2008-08-19 to 2008-08-19	infrared
5	3C279	2008-08-17 to 2008-08-17	infrared
6	3C279	2008-08-16 to 2008-08-16	infrared
7	PKS 0208-512	2008-08-18 to 2008-08-25	X-/hard X-ray (INTEGRAL)
8	BL LAC	2008-08-20 to 2008-09-09	X, optical, Gamma
9	All available LAT-monitored blazars + Fermi ToOs	2008-10-03 to 2008-10-09	Optical
10	All available LAT-monitored blazars + Fermi ToOs	2008-10-28 to 2008-11-03	Optical
11	All available LAT-monitored blazars + Fermi ToOs	2008-11-24 to 2008-12-05	Optical
12	All available LAT-monitored blazars + Fermi ToOs	2008-12-26 to 2009-01-01	Optical

This report informs the Fermi Project so that calibrations or other activities such as TOO's are not scheduled in conflict with MW

Targets of Opportunity -- ToOs

Similar to Planned Intensive Campaigns, but started ad hoc by a transient event. All Gamma-ray Bursts fall into this category.

Recent non-GRB examples - 3C454.3 “snapshot” campaign, flares of PKS 1454-354, 3C273, PKS 1502+106.

These campaigns are announced by GCN or ATEL

Cycle 2 GI Program

- **Continue to have cooperative programs with NRAO and NOAO.**
- **With the LAT data public, there will be more opportunities for Monitoring and Planned Intensive Campaigns.**
- **MW TOO's triggered by Fermi or triggers of TOO's for Fermi continue to be possible.**
- **Followup MW observations of Fermi LAT sources will be enabled by the release of the bright source list at 6 months.**